



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/775,170

02/11/2004

Makoto Sugizaki

Q79778

1020

23373 7590 12/03/2007
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

TYLER, NATHAN K

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

12/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/775,170	Applicant(s) SUGIZAKI, MAKOTO	
	Examiner Nathan K. Tyler	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 3,5-7,9-21,23,24 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,8,22 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11022004; 25072007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 3, 5-7, 9-21, 23, 24, and 26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 15 October 2007.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

4. Claim 22 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 22 defines a “halftone dot conversion program storage medium” embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). The examiner suggests amending the claim to embody the program on “computer-readable medium” or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

5. The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature,

art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

6. Claim 25 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 25 recites a “dot matrix” which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, 4, and 25 rejected under 35 U.S.C. 102(b) as being anticipated by Kashiwara (US 5742317 A).

Regarding **claim 1**, Kashiwara discloses a halftone dot conversion apparatus comprising: a tone value obtaining section that obtains tone values of the tone image data ("As shown in FIGS. 3 and 4, the interpolation circuit 18 refers to the image signals of the peripheral pixels around a target pixel M and converts into signals a, b, c, and d in which the densities in the main scan and sub scan directions are twice as large as those of the image signal for the target pixel M" at column 10, line 50); and a halftone dot conversion section that forms the halftone dots by sets of drawing pixels number of which is associated with the tone values obtained by the tone value obtaining section ("The above conversion is executed by comparing the output data of the shift register 12 and a plurality of predetermined dot patterns" at column 10, line 55. Fig. 5 shows the determination for a number of drawing pixels), and scatters blanks of the drawing pixels about the halftone dots, on at least a predetermined range of tone values (Fig. 17 shows 4 blank pixels for all 16 tone values ranging from 0 (not shown in Fig. 17, refer to Fig. 6) to 15).

Regarding **claim 2**, Kashiwara discloses that the halftone dot conversion section always scatters the blanks of the drawing pixels about the halftone dots, at associated positions, respectively, regardless of the tone values (As stated in the grounds for rejection for claim 1, Fig. 17 shows 4 blank pixels for all 16 tone values ranging 0-15. Kashiwara states that the tone values range from 0 to 15 at column 11, line 9).

Regarding **claim 4**, Kashiwara discloses that the halftone dot conversion section determines geometry of halftone dots using a dot matrix defining halftone dots by an

arrangement of thresholds to be compared with the tone values (Fig. 5 shows the dither matrix containing threshold values. The resulting halftone dots shown in Fig. 17 are the result of the matrix shown in Fig. 5 being repeated to create an 8x8 matrix).

Regarding **claim 25**, Kashihara discloses a dot matrix comprising: a first threshold group defining a set geometry according to the tone values (see Fig. 5); and a second threshold group defining blanks scattering inside the set geometry defined by the first threshold group on tone values in at least a predetermined range (Fig. 17 shows all tone values with 4 blank pixels, the blank pixels corresponding to a threshold value of 16 (out of range 0-15) as shown in Fig. 5).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kashihara.

Regarding **claim 8**, Kashihara discloses that the halftone dot conversion section has a plurality of halftone dot conversion systems (systems shown in Figs. 6, 17, 20) including a first halftone dot conversion system that forms the halftone dots by sets of drawing pixels number of which is associated with the tone values obtained by the tone value obtaining section, and

scatters blanks of the drawing pixels about the halftone dots, on at least predetermined range of tone values (see grounds for rejection for claim 1). While Kashihara does not explicitly disclose that the halftone dot conversion section uses the first halftone dot conversion system of the plurality of halftone dot conversion systems, on image data for an ink jet printer, Kashihara does state that the system is used on image data for "a laser beam printer or the like" (column 1, line 7). It would have been obvious at the time the invention was made to one of ordinary skill in the art to use the halftone dot conversion system disclosed by Kashihara in an inkjet printer, as inkjet printers are inexpensive and widely used, and image data for inkjet printers must also undergo halftone dot conversion [official notice].

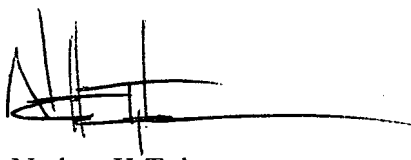
Regarding **claim 22**, while Kashihara discloses a tone value obtaining section that obtains tone values of the tone image data; and a halftone dot conversion section that forms the halftone dots by sets of drawing pixels number of which is associated with the tone values obtained by the tone value obtaining section, and scatters blanks of the drawing pixels about the halftone dots, on at least a predetermined range of tone values (see grounds for rejection for claim 1), Kashihara does not disclose this being implemented using a program stored on a computer readable medium. It would have been obvious at the time the invention was made to one of ordinary skill in the art to implement the halftone dot conversion system disclosed by Kashihara using software code stored in a computer readable medium, as image processing functions are more easily and cheaply implemented using software [official notice].

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan K. Tyler whose telephone number is 571-270-1584. The examiner can normally be reached on M-F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Nathan K Tyler
Examiner
Art Unit 2625
KING Y. POON
SUPERVISORY PATENT EXAMINER